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Flash Research Paper #1 – Datacenters and Networking

Over the past year, our company has experienced 10 unscheduled outages costing us over $25,000,000. The solution to this problem is upgrading our Tier I datacenter to a Tier III datacenter, saving us $24,114,528 annually. With an average increased availability rate of 99.98% we can reduce our downtime by 94%. The additional components in a Tier III datacenter increase our datacenter availability, therefore reducing our operating costs and affecting our bottom line.

Upgrading our datacenter from Tier I to Tier III will provide back-up components, allow our system to operate during maintenance, and decrease system downtime. The Tier I datacenter that we are currently running only has a single set of capacity components and a single power source; when power outages or failures occur, we experience a significant amount of downtime because we do not have substitute components or power sources to keep our datacenter running. On the other hand, Tier III datacenters are equipped with both redundant capacity components, and additional power supplies, that automatically replace failed components that are necessary for operation; backup parts increase the possibility that the datacenter can continue operating during outages or failures by 94%. Additionally, redundant components and power sources allow the datacenter to perform its primary functions during planned maintenance – unlike Tier I datacenters that must be shut down periodically to perform maintenance. The implementation of a Tier III data center will therefore reduce our downtime by 1629 minutes per year at a rate of $14,800 per minute.

Investing in a Tier III datacenter will result in a net savings of $13,229,056 in the first three years of implementation with a $24,114,528 annual savings every year thereafter. These immense saving are a direct result of datacenter downtime with a 38% return on investment. The $35,000,000 cost associated with a Tier III datacenter is surely worth it when you look at the direct savings. Factoring in the secondary costs of downtime, like a damaged brand reputation, only strengthen our need for an improved datacenter.

Attachments

Table #1: Cost of Downtime in One Year

Cost of Downtime in One Year				
Tier Level	Availability	Minutes in one year	Downtime (min/year)	Downtime cost in one year ($)
Tier I	99.67%	525600	1734.48	$ 25,670,304.00
Tier III	99.98%	525600	105.12	$ 1,555,776.00
			Net Savings per year	$ 24,114,528.00

Table #2: Cost and Benefit Analysis for Three Years

Year	Costs	Benefits
1	$ (35,000,000.00)	0
2	$ -	$ 24,114,528.00
3	$ -	$ 24,114,528.00
Total	$ (35,000,000.00)	$ 48,229,056.00
Net Savings (3 years)		$ 13,229,056.00

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